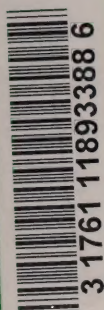


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Guidelines for the interpretation
of the regulation 309.

(s.n.)



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APPENDIX C

GUIDELINES FOR THE INTERPRETATION

OF THE REGULATION

(Municipal Standards for Landfills)

This Guideline is only for the interpretation of the proposed standards in the application of Regulation 309. The Ministry Guideline, "The operation, establishment, management and closure of landfilling sites, (under revision) which provides administrative and technical details for waste disposal sites, should be consulted in conjunction with these guidelines when applying the regulation.

~~Ministry of Environment & Energy~~
~~Approval Branch Library~~

GUIDELINES FOR THE INTERPRETATION OF O.R.309

1. LEGAL SURVEY

a) RATIONALE

The intent is to provide a legal designation for new sites that can be registered on title for the protection of future landowners and also to provide a legal description of the area which is to be used for the disposal of waste.

b) MINIMUM REQUIREMENTS

A legal survey should be prepared for all lands set aside for waste disposal including lands to be used for buffer areas. The boundaries should be set out so as to enable accurate determination of the location of the site. Reference point(s) from which site and fill boundaries can be determined should be marked by visible posts.

Because the legal survey may not be obtainable for sites that are located on crown lands and sites that are operated by Ministry of Natural Resources, a description of the land which is to be used for landfilling and the buffer zone should be provided.

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2. REGISTRATION ON TITLE

a) RATIONALE

The intent is to identify lands which are being or have been used for waste disposal. This will assist in future land use planning adjacent to and in the vicinity of the site as well as on the site.

b) MINIMUM REQUIREMENTS

The legal survey of the landfilling site should be registered under a relevant Act e.g. The Land Registry Act, the Land Titles Act, the Mining Act.

The registration must be completed before any waste is deposited at the site.

3. DEVELOPMENT PLANS

a) RATIONALE

The intent is to provide for orderly and planned operation of the site to protect the natural environment and to ensure that the management of the site is in accordance with the approval of the site. A Development Plan which is fully adhered to should lead to optimum site utilization.

b) MINIMUM REQUIREMENTS

The Development Plan should accompany the application for the site approval.

The plan should include site maps, showing the adjacent properties, location of structures, surface drainage courses and users of ground and surface waters on and adjacent to the site.

The development plan may also include other requirements of landfilling standards, e.g. signs, fencing, on-site road, cell cover and monitoring locations.

For classes: IO, RO, UO sites

The plan can be prepared by the owner/operator or by a professional knowledgeable in waste

management and disposal techniques. The proponent must submit a site plan detailing the site development, contact person, scheduling, maintenance and housekeeping, methods of operation, equipment used, types of waste accepted, lifetime capacity of the site, sequence of utilization of areas of site for filling, on-site roads, and other relevant aspects. The Development Plan must also address a monitoring program, cell cover, final cover, leachate and gas control measures, surface drainage and site contours, contingency plans, closure program and end use. The plan need not be complex and an anticipatory description of the ways the proponent intends to operate the site will be sufficient.

For classes: I40, R40, U40, and I200, R200, U200 sites

A comprehensive development plan should be prepared by professionals who are proficient in waste management and disposal techniques. The minimum requirements of the plan include, site development, planned methods of operation, equipment to be used, the types of waste to be accepted, initial and final contours, cross-sections of the fill areas and details of any leachate and gas control measures.

4. FENCING

a) RATIONALE

The intent is to discourage, for safety reasons, unauthorized entry by public or entry by animals into the landfill area.

b) MINIMUM REQUIREMENTS

For class: IO, I40, R0, R40 and U0 sites

Natural topographic barriers or a minimum farm type fence will be required.

For class: I200, R200, U40 and U200 sites

A security type, chain link fence, or similar, will be required.

5. SITE PREPARATION REPORT

a) RATIONALE

The intent is to confirm, before any wastes are deposited, that the site preparation has been carried out in accordance with the approved development plans. If, during the development of the site any unusual observations are noted which require modifications to the original plan, such changes to the plan should be included.

b) MINIMUM REQUIREMENTS

Before any waste is deposited, a written report will be submitted to the Regional Director by the proponent that specifies the scope of the work which has been carried out. The report will provide details of the construction of all the items necessary, e.g. on-site roads, cells, fences, leachate control measures etc., if required. It will also set out changes that were not originally identified in the approved Development Plan, in sufficient detail that will enable the Regional Director to approve the necessary modifications to the original plan before any waste is deposited.

6. BUFFER

a) RATIONALE

The intent is to provide a peripheral area around the fill area, within the boundaries of the site, that is to be used for the on-site attenuation of contaminants, maintenance and management of site and equipment/and also to provide room to implement technical corrective measures for the collection and treatment of contaminants.

b) MINIMUM REQUIREMENTS

A minimum of 30 metres of on-site buffer area around the fill area shall be provided for all sites. This should be sufficient for:

- 1) general operation and maintenance controls;
- 2) leachate and gas control measures;
- 3) any visual barriers required;
- 4) noise, odour and dust controls.

The exact width of the buffer zone would be site specific but will never be less than 30 metres.

7. ON-SITE ROADS

a) RATIONALE

The intent is to allow for the normal, orderly operation of the site under all reasonable weather conditions.

b) MINIMUM REQUIREMENTS

All on-site roads should be capable of handling vehicles hauling waste to and from the sites under normal weather conditions.

A single lane on-site road should be 3 metres wide, appropriately surfaced and have a one metre shoulder for snow removal. It should also have suitable passing and turning provisions, if needed.

8. SIGNS

a) RATIONALE

The intent is to provide the users of the site with information (and direction) regarding the site operation and management, and any other pertinent information such as on-site operating procedures.

b) MINIMUM REQUIREMENTS

A minimum of one sign at the entrance to all sites shall be provided. The sign should provide information regarding the hours of operation and types of wastes to be accepted. It should also identify the owner/operator of the site.

9. SCREENING

a) RATIONALE

The intent is to provide on-site screening to shield the public view of landfilling operations from adjacent areas.

b) MINIMUM REQUIREMENTS

Requirements can vary with the location of the site. On-site buffer areas can be used to provide screening. In certain cases, where on-site screening may not be effective due to topographic features, off-site screening on a case by case basis may be required.

For class I0, I40, I200 sites visual screening from the public road is required.

For class R0, R40, R200 sites visual screening from sensitive land uses is required. Sensitive land use is a land use where man or the natural environment may experience an adverse environmental effect.

For class U0, U40, U200 site screening from all sides of the site is required.

10. HOUSEKEEPING

a) RATIONALE

The intent is to provide for (on-site) house-keeping measures in a landfilling site operation to minimize the nuisance effects such as dust and litter.

b) MINIMUM REQUIREMENT

For class I0 and I40 sites, clean-up in spring and fall should be carried out.

For class I200, R0, R40, R200, U0, U40, U200 sites housekeeping measures, degree and frequency, should be included in the development plans, e.g. installation of snow fences to control the litter, use of dust suppressants on road to control dust and covering the waste immediately after deposition to control odours.

11. CONTINGENCY PLAN

a) RATIONALE

The intent is to ensure that appropriate backup measures are available in the event that the approved site design fails.

b) MINIMUM REQUIREMENTS

A Contingency Plan should identify and outline backup measures in the event operation cannot continue as normally intended. The requirements would be site specific. The plan should address the potential scenario for failure and remedial measures.

The Contingency Plan should also identify financial considerations associated with the above-noted item. It should also include alternate disposal scenario.

A monitoring program must be part of the Contingency Plan.

For class IO, I40, RO, UO sites the Contingency Plan can be prepared by persons knowledgeable in the operation and management of waste disposal sites, i.e. any experienced person or firm, but not necessarily a consultant or a consulting firm.

For class I200, R40, R200, U40, U200 sites the Contingency Plan should be prepared by persons qualified in the operation and management of waste disposal sites, i.e. a staff person or a consultant or a consulting firm experienced in the operation of waste disposal sites.

12. HYDROGEOLOGICAL AND HYDROLOGICAL EVALUATION

a) RATIONALE

A Hydrogeological and Hydrological Evaluation is required to ensure that the establishment and the operation of the landfilling site will not adversely impact on the environment or public health and safety.

b) MINIMUM REQUIREMENT: FOR ALL CLASSES

An assessment and evaluation of the geology and hydrogeology of all sites will be required and must be prepared by a qualified professional. The details of the study will be site specific.

The extent of the hydrogeologic assessment would depend upon factors such as the consequences of failure and the complexity of the hydrogeologic system.

13. SURFACE DRAINAGE

a) RATIONALE

The intent is to provide protection from landfilling operations for adjacent property owners to ensure that their properties will not be adversely affected by surface drainage arrangements.

b) MINIMUM REQUIREMENTS

Surface water protection should be adequately considered during the selection and design of the landfilling site. There should be minimal disturbance to the surrounding natural drainage pattern, either during development and operation or after completion and closure of the site. Perimeter ditches, impervious dikes, or any other engineered works that are normally used to intercept or direct surface waters, may be constructed around the fill area. The extent of the work required would be determined on a site specific basis.

Surface waters which contain contaminants (greater than the agreed concentration) originating from the landfill should be adequately treated before discharging to adjacent lands.

14. CELL COVER

a) RATIONALE

The intent is to ensure that deposition of waste will not adversely affect the environment and public health by providing cell cover while the site is in operation to control the emergence and spread of insects, rodents, litter and odour.

b) MINIMUM REQUIREMENTS

A minimum of 15 cm. of soil cover or equivalent material acceptable to the Director (e.g. synthetic foams or shredded waste) should be provided for adequate control of insects, rodents and birds, and to maintain an aesthetically acceptable site operation. The waste must be compacted before any cell cover is applied.

The frequency of cell cover should be as follows:

Class IO sites - every 30 days, except during the months of December, January, February and March, when no cover need be applied.

Class RO sites - every week.

Class UO sites - twice per week.

Class I40, I200, R40, R200, U40, U200 sites - on a daily basis or when the site is open, shortly after the deposition and compaction of the waste has been completed.

15. BURNING OF WASTE

a) RATIONALE

Opening burning of municipal waste is not considered an environmentally sound waste disposal method since burning creates: - a) air emission concerns, b) public and environment safety, c) lack of site operational control, d) nuisance, e) fire hazard.

b) MINIMUM REQUIREMENTS

Under controlled conditions and supervision, burning of segregated brush and clean wood wastes may be allowed at the following classes of sites: IO, I40, I200, R0, R40 and R200.

Burning of brush and clean wood wastes that have been segregated should only be allowed on a designated, cleared area of the site. The burning operation should be supervised at all times. A fire break of 30 m. around the burning area should be provided.

In the event there are continuing and unresolved complaints from the down-wind residents, the District Officer of the Ministry's District Office will direct appropriate remedial measures, including termination of the activity.

16. FINAL COVER

a) RATIONALE

Once a site or an area has reached its design limits and is to be closed, final cover should be applied to restore the area to its approved designated land use and to minimize the infiltration of precipitation.

b) MINIMUM REQUIREMENTS

A minimum soil cover of 0.75 metres plus vegetation or an approved synthetic membrane shall be provided for all classes to prevent wind and water erosion.

The final cover should be compacted over the fill area as soon as practicable and vegetation re-established. The final cover details should be included in the development plan.

For classes I40, I200, R40, R200, U40 and U200 sites, the proponents should also provide details for final cover including maintenance and restoration of the site to a beneficial use.

17. LEACHATE CONTROL

a) RATIONALE

The intent is to protect ground and surface waters from off-site contamination by leachate.

b) MINIMUM REQUIREMENTS

The requirements are site specific.

All attempts should be made in the preliminary stages of the site selection process to consider sites which may provide for natural attenuation, i.e. to contain and naturally treat the contaminants on the site. If this cannot be achieved, then engineered controls for the collection and treatment of leachate must be addressed.

The proponent of the site must determine any adverse off-site impacts that may arise and should submit proposals for approval for mitigating such effects. Both quality and quantity of ground water and surface water should be described in terms of their suitability for existing and potential uses. On-site buffer

areas can be used for leachate control. Leachate may also be naturally attenuated off-site provided an off-site leachate contaminant attenuation zone has been agreed to (legally) by the property owner(s) and the site owner/operator. Ministry approval must be obtained if off-site leachate attenuation is contemplated.

18. GAS CONTROL

a) RATIONALE

The intent is to protect the safe use of adjacent lands and the safety of structures from migrating gases generated from the decomposition of waste.

b) MINIMUM REQUIREMENTS

The requirements will be site specific. The landfill site design should provide for on-site gas control measures.

The on-site buffer area is set aside for control purposes in order to prevent landfill generated methane gases from migrating off-site.

19. SUPERVISION

a) RATIONALE

The intent is to provide for orderly and safe operation of the landfill site, and to ensure that the wastes are handled in an approved manner and that unauthorized wastes are not accepted.

b) MINIMUM REQUIREMENTS

A full-time attendant for site classes I40, I200, R40, R200, U40 and U200 sites must be present when sites are open for public use. Class U0 sites will be inspected daily by the proponent or the owner/operator's staff. Class I0 and R0 sites shall be inspected on a weekly basis by the owner/operator's staff. The inspection implies a visit to the site to ensure that the site is being operated according to the Certificate of Approval and inspection results should be recorded.

20. VECTORS AND RODENTS

a) RATIONALE

The intent is to protect public health and safety by adequate control of vectors and rodents.

b) MINIMUM REQUIREMENTS

Contingency measures are required for classes I01, I40 and R0 sites. For classes I200, R40, R200, U0, U40 and U200 sites a routine pest control program must be provided.

21. MONITORING PROGRAM

a) RATIONALE

The intent is to ensure that the landfill is operating as designed and that appropriate data are available in order to determine the need for the implementation of the contingency measures.

b) MINIMUM REQUIREMENTS

The design of the monitoring program will be site specific. It will provide a description of the hydrogeological system at the site and the adjacent areas.

Class 10 sites will only require general monitoring of existing adjacent wells and/or water courses. For all other classes of sites a predictive and a general monitoring program will be provided.

Predictive monitoring requires that anticipated monitoring results be specified in advance.

A general monitoring program normally applies to existing sites which would determine the migration of contaminants.

22. STATUS REPORT

a) RATIONALE

The intent is to provide the Ministry with a periodic, updated report on the operation and management of the landfilling site.

b) MINIMUM REQUIREMENTS

Status report formats will be site specific. The report will include items such as operating information, i.e. any variance from the development plans, complaints, if any, received regarding the operation of the site, monitoring data and their interpretation, anticipated changes in the operation and the management of the site, the expected size of the site, including plans for new sites at least within five years of site closure.

For class I200, R0, R40, R200, U0, U40 and U200 the owner/operator of the site must submit a report once a year to the Regional Director.

For site classes I0 and I40, a report is required once every two years.

23. FINANCIAL GUARANTEES

a) RATIONALE

The intent is to ensure that all private site owner/operators have adequate funds for any remedial work for non-anticipated occurrences on site (such as waste re-location, on-site road repair and leachate collection to prevent off-site contamination) and off-site remedial work (such as leachate and gas control systems), as well as for anticipated gas and leachate control systems. These funds would also be used for routine activities such as monitoring and closure requirements.

b) MINIMUM REQUIREMENTS

Financial guarantees can be provided.

Financial guarantees are required for private site owner/operators. They may be required for municipally owned sites at the Director's discretion.

The amount of the financial guarantees is site specific. They must cover a period of ten years and would be reviewed for additional ten year periods, each ten years thereafter.

If at any time during a ten year period, monitoring results indicate that the site safety is no longer a concern, then the funds may no longer be required.

GU/sp
June, 1986
2320R

REGULATION 309

CLASSIFICATION OF MUNICIPAL LANDFILL SITES

Background Notes

Appendix 6 of the Blueprint outlines general standards for the operation and siting of landfill sites. Feedback received from the public input process indicated that certain small municipalities felt that the regulations as proposed were general and applied to larger sites. They also stated that there should be different requirements for smaller and remote sites. In addition, the Ministry's staff feel that with general, as opposed to specific standards, it is difficult for the Director or the hearing boards to make sound decisions.

Accordingly, the Waste Management Regulation 309 is being revised to make the standards more specific. Municipal waste disposal sites have been categorized into different classes based on two criteria; (a) the degree of disposal site usage, and (b) the proximity to and nature of surrounding land use.

(a) Site Use Categories

Degree of usage is categorized into three groups. The lifetime capacity of a site is assumed to be 20 years.

- 1) lifetime capacity of greater than 200,000 m³* or 100,000 tonnes;
(greater than 7,500 persons/yr)
- 2) between 40,000-200,000 m³ (20,000 and 100,000 tonnes); and
- 3) less than 40,000 m³ or 20,000 tonnes. (Approximately 1400 persons/yr.

- * Based on a waste compaction density of 600 kg/m^3 , 100,000 tonnes equals $170,000 \text{ m}^3$; however, for this Regulation it has been rounded out to $200,000 \text{ m}^3$ for simplification purposes.

(b) Site Separation Categories

Land use separation distances from sensitive land uses are categorized into: 1) greater than 3 km, i.e. isolated sites (I) (in these cases the presence of a landfill should have a negligible impact); 2) 500 metres to 3 km, i.e. rural sites (R) (where there may be some conflict from effects such as odour and noise) and; 3) less than 500 metres, i.e. urban sites (U) (where there could be land use conflict such as odour, litter, traffic, dust, leachate and gas migration).

The separation distance is to be measured from the perimeter of the fill area (not from the site boundary) of a site to any existing or proposed land use, at, above or below grade which includes:

- (i) a permanent structure used in animal husbandry;
- (ii) agricultural land used for pasturing livestock; or
- (iii) a permanent structure where
 - (A) a person sleeps or
 - (B) a person is employed, full-time, for at least three months in a year,but not including food service facilities or motor vehicle service facilities adjacent to a highway, utility operations, scrap yards, heavy industrial uses, gravel pits, quarries, mining activities or forestry activities.

Excepted land uses include above grade transportation routes and utilities, fences, wood harvesting and other forestry activities; certain farming activities, scrap yards, incinerators, gravel pit and quarries and other mining operations and such land uses, which would not be threatened by any hazard to public health or safety or would not be impaired by nuisance effects.

SITE CLASSIFICATION

Based on these criteria, a matrix of waste disposal sites has been developed consisting of three groups, divided into nine classes (see Matrix attached). For the purposes of regulation, the matrix has been written in standard legal format. (Reference Appendix "B")

Where possible, the regulations identify specific minimum requirements. Guidelines will be developed to assist the Director in applying discretion to alter the requirements when necessary.

Although the Blueprint proposed both siting and operating standards, it has been decided that siting standards should not be regulated in the same way as operational standards because siting must be decided on a case-by-case basis. Once a site has been selected and a Certificate of Approval issued, the siting conditions cannot be altered and therefore cannot be regulated on a day-to-day basis. Therefore, required siting specifics will be covered in guidelines which are under preparation.

This matrix and draft regulation address only the standards for sites accepting municipal waste. For sites accepting hazardous waste, the existing regulation (O. Reg. 309) applies. (Development of regulations specific to hazardous waste sites is contemplated in the future).

Other sections of Appendix 6 of the Blueprint, i.e. waste processing facilities and transfer stations, will also be addressed at a later date in similar fashion to this approach. Appropriate regulations and guidelines will be prepared.

The Reasonable Use Concept as defined in the Bluebook entitled "Water Management - Goals, Objectives and Implementation Procedures of the Ministry of the Environment" has been considered and incorporated in this approach in that zero discharge at the boundary is not considered a necessity.

It is intended that the proposed approach will initially apply to new sites. A phase-in program has been developed for existing sites (Reference Appendix "D").

It is to be noted that this proposed approach will simplify enforcement by Ministry personnel, since subjective judgement by staff will be minimized. Similarly, site owner/operators will have a clear understanding of the operational requirements for their site. Although meeting the requirements may require additional costs to some municipalities, the end result will be sites that are more environmentally sound and costs would probably not exceed those associated with strict application of the existing regulations.

Sixty-eight per cent (68%) of the existing sites fall in the lowest category (Io Uo Ro). New sites in the highest category (11.5%) will be subject to the Environmental Assessment Act (as proposed in the Blueprint and revised Part V of the EPA), while those in the smaller classes would fall under EPA only.

It should be noted that situations could arise where a site could be "bumped up" or "down" to a higher or lower classification at some time in the future whenever a change in adjacent land uses or in the site usage (volume) occurs.

It is, therefore, important to recognize that sites should not be developed where there is a potential of adverse impact on future land use activities, or conversely, Municipalities should recognize the importance of the landfill site when approving new land developments in the vicinity of existing waste disposal sites.

GU/gr
June 10/86
1575R/P

LEGEND

L-<40,000 m³ lifetime or 20,000Tonnes
M 40,000 200,000 m³ life time or 20,000-100,000Tonnes
H->200,000 m³ lifetime or 100,000Tonnes

GROUP I GROUP R GROUP U

Standards	>3 km			500 m-3 km			<500 m			COMMENTS
	0 LIGHT	40 MED.	200 HEAVY	0 LIGHT	40 MED.	200 HEAVY	0 LIGHT	40 MED.	200 HEAVY	
17. Leachate Control	<----- For all classes ----->									(See Guideline Appendix C)
18. Gas Control	<----- For all classes ----->									
19. Supervision	Weekly insp.	When open	When open	Weekly insp.	When open	When open	Daily insp.	When open	When open	
20. Vectors & Rodents	C.M.	C.M.	P.C.	C.M.	P.C.	P.C.	P.C.	P.C.	P.C.	
21. Monitoring Program	General monitoring<----- General and predictive monitoring ----->									
22. Status Reports	Every two years	<----- Annual status reports to Regional Directors ----->		Annual status reports to Regional Directors for all classes of sites		<----->				
23. Financial Guarantees	<----- For all private sites ----->									

APPENDIX 'B'

REGULATION 309 - LEGAL FORMAT



Order in Council

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and concurrence of the Executive Council, orders that

the appended Regulation be made under the Environmental Protection Act.

Recommended _____
Minister of the
Environment

Concurred _____
Chairman

Approved and Ordered _____
Date

Lieutenant Governor

REGULATION TO AMEND
REGULATION 309 OF REVISED REGULATIONS OF ONTARIO, 1980
MADE UNDER THE
ENVIRONMENTAL PROTECTION ACT

1.-(1) Section 1 of Regulation 309 of Revised Regulations of Ontario, 1980, as amended by section 1 of Ontario Regulation 322/85 and section 1 of Ontario Regulation 464/85, is further amended by adding thereto the following paragraphs:

1a. "adjacent property" means the land bordering a waste disposal site and a contaminant attenuation zone;

.

9a. "contaminant attenuation zone" means the zone beneath the surface, on the portion of the leachate buffer area located beyond the waste disposal site boundary, where contaminants will be naturally attenuated;

.

19b. "fill area" means the area of a waste disposal site set aside for landfilling or dumping;

.

35a. "landfill" means a waste disposal site where landfilling takes place;

.

36a. "leachate buffer area" means a buffer area adjacent to the fill area where contaminants in the subsurface will be controlled;

.

40a. "municipal waste" means any of or any combination of,

- i. domestic waste,
- ii. commercial, industrial and other waste similar in composition to domestic waste,
- iii. liquid waste that contains no putrescible materials or soluble or decomposable chemical substances,
- iv. waste from the operation of a sewage works subject to the Ontario Water Resources Act where the works,
 - A. is owned by a municipality,
 - B. is owned by the Crown subject to an agreement with the municipality under the Ontario Water Resources Act, or
 - C. receives only waste similar in character to the domestic sewage from a household,
- v. waste from the operation of a water works subject to the Ontario Water Resources Act,
- vi. liquid waste that is produced or otherwise accumulated in any month in an amount less than twenty-five litres.
- vii. waste that results directly from food processing and preparation operations, including food packing, food preserving, wine making, cheese making and restaurants,
- viii. drilling fluids and produced waters associated with the exploration, development or production of crude oil or natural gas,
- ix. processed organic waste,
- x. asbestos waste,
- xi. ash resulting from the incineration of domestic waste or other waste of a similar nature,

- xii. waste that is a hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste and that is produced in any month in an amount less than five kilograms or otherwise accumulated in an amount less than five kilograms,
- xiii. waste that is an acute hazardous waste chemical and that is produced in any month in an amount less than one kilogram or otherwise accumulated in an amount less than one kilogram,
- xiv. an empty container or a liner from an empty container that contained hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste,
- xv. an empty container of less than twenty litres capacity or one or more liners weighing, in total, less than ten kilograms from empty containers, that contained acute hazardous waste chemicals,
- xvi. the residues or contaminated materials from the clean-up of a spill of less than five kilograms of waste that is a hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste,
- xvii. residues or contaminated materials from the clean-up of a spill of less than one kilogram of waste that is an acute hazardous waste chemical, or
- xviii. radioisotope wastes disposed of in a municipal waste landfill in accordance with the written instructions of the Atomic Energy Control Board,

but does not include hazardous waste;

40b. "municipal waste landfill" means a landfill approved to accept only municipal waste for landfilling;

.

48a. "peripheral area" means the portion of a landfill that is not fill area;

54a. "sensitive land use" means a use of land,

- i. to contain therein a permanent structure used in animal husbandry,
- ii. as agricultural land for pasturing livestock, or
- iii. to contain thereon a permanent structure where,
 - A. a person sleeps, or
 - B. a person is employed, full-time, for at least three months in a year,

but not if the permanent structure is or is used in conjunction with a motor vehicle service facility adjacent to a highway or a utility operation, scrap yard, heavy industrial use, gravel pit, quarry, mining activity or forestry activity;

54b. "separation distance" means the shortest distance between a point in the fill area of a waste disposal site and a sensitive land use.

(2) The said section 1 is further amended by adding thereto the following subsections:

(2) A certificate of approval or provisional certificate of approval for a waste disposal site operating as a landfilling site, at the time that this subsection comes into force, that authorizes the acceptance, at the site, of only domestic waste or only domestic waste combined with other waste that is municipal waste authorizes the holder to operate the site as a municipal waste landfill so long as it complies with the requirements and standards that apply to municipal waste landfills.

(3) Every waste disposal site operating under a certificate of approval or provisional certificate of approval as a dump is classified as a landfill.

2. Paragraph 6 of section 4 of the said Regulation is revoked and the following substituted therefor:

6. Landfills.

3. The said Regulation is amended by adding thereto the following section:

7b.--(1) Municipal waste landfills are classified as follows:

1. Urban - a landfill with a separation distance of less than 500 metres.
2. Rural - a landfill with a separation distance of not less than 500 metres and not more than three kilometres.
3. Isolated - a landfill with a separation distance of more than three kilometres.

(2) In this section, when the letter,

- (a) "U" is used to refer to a municipal waste landfill, the reference is to an urban landfill;
- (b) "R" is used to refer to a municipal waste landfill, the reference is to a rural landfill;
and
- (c) "I" is used to refer to a municipal waste landfill, the reference is to an isolated landfill.

(3) In this section, when the numeral or numerals,

- (a) "0" is used in conjunction with a reference to a municipal waste landfill, the reference is to a landfill with an approved lifetime capacity of less than 40,000 cubic metres;
- (b) "40" are used in conjunction with a reference to a municipal waste landfill, the reference is to a landfill with an approved lifetime capacity of not less than 40,000 cubic metres and not more than 200,000 cubic metres; and
- (c) "200" are used in conjunction with a reference to a municipal waste landfill, the reference is to a landfill with an approved lifetime capacity of more than 200,000 cubic metres.

(4) A standard listed in subsection (6) applies to every landfill in the classes of landfills indicated by the site code except as otherwise noted and "all classes" means classes I0, I40, I200, R0, R40, R200, U0, U40 and U200.

(5) A standard listed in subsection (6) applies to every landfill in the specified class at or from the time or during the period indicated by the timing code and for purposes of this section the timing codes have the meanings set out opposite thereto:

Approval: Details of the manner of intended compliance must form part of the application for a certificate of approval or amendment thereto.

Preparation: Compliance with the standard must be achieved before waste is deposited in or on the site or, where the certificate of approval or provisional certificate of approval so provides, before waste is deposited in or on a portion of the site.

Operations: Compliance with the standard must be maintained at all appropriate times, continually or from time to time, following the initial deposit of waste at the site.

(6) The following standards apply to municipal waste landfills:

01 Survey

- 011 A reference point on the waste disposal site outside the fill area must be defined by an Ontario Land Surveyor and marked with a permanent marker.

Site Code: All classes.

Timing Code: Preparation.

- 012 A survey prepared by an Ontario Land Surveyor must indicate the reference point, the boundaries of the waste disposal site and the fill area and the area underlain by the contaminant attenuation zone, if any.

Site Code: All classes except sites on unpatented Crown land.

Timing Code: Preparation.

02 Registration on Title

- 021 A copy of the certificate of approval or provisional certificate of approval must be registered on the title to the waste disposal site and the area underlain by the contaminant attenuation zone, if any, in the appropriate Land Registry Office.

Site Code: All classes except sites on unpatented Crown land.

Timing Code: Preparation.

03 Development Plans

- 031 A site development plan must be prepared and kept up to date and adhered to and must address the proposed development of the site, including:

- i. contact person
- ii. methods of operation
- iii. sequence of utilization of areas of site for filling
- iv. scheduling
- v. maintenance and housekeeping programs

- vi. equipment, including safety, first aid and fire control equipment
- vii. site plan
- viii. on-site roads
- ix. contingency plans
- x. surface drainage and site contours
- xi. final cover, cover materials and vegetation
- xii. leachate control measures
- xiii. gas control measures
- xiv. monitoring programs
- xv. closure program
- xvi. end use

Site Code: All classes.

Timing Code: Approval and Operations.

04 Fencing and gates

- 041 Except at intended access points, unauthorized access to the fill area must be discouraged by suitable fencing, such as is customarily used on farms, or suitable natural barriers.

Site Code: IO, I40, RO, R40, UO.

Timing Code: Preparation and Operations.

- 042 Except at intended access points, unauthorized access to the fill area must be discouraged by suitable fencing, such as chain link fence.

Site Code: I200, R200, U40, U200.

Timing Code: Preparation and Operations.

- 043 A gate must be provided for every access point to the fill area and kept locked whenever a supervisor is not present on the site.

Site Code: I40, I200, R40, R200, U40, U200.

Timing Code: Preparation and Operations.

- 044 Lagoons, pits and similar hazards on the waste disposal site must be fenced as a safety precaution.

Site Code: All classes.

Timing Code: Preparation and Operations.

05 Site Preparation Report

- 051 Appropriate preparation and development of the site or portion of the site must be carried out in accordance with the approved site development plan and a written statement prepared and submitted to the Director summarizing the work that has been done and describing any departures from the approved site development plan.

Site Code: All classes.

Timing Code: Preparation.

06 Peripheral Area

- 061 The fill area shall be surrounded by a peripheral area at least thirty metres wide.

Site Code: All classes.

Timing Code: Approval and Operations.

07 On-Site Roads

- 071 Road access to the fill area must be maintained.

Site Code: All classes.

Timing Code: Preparation and Operations.

072 All on-site roads must be capable of handling vehicles hauling waste to and from the site under normal weather conditions.

Site Code: All classes.

Timing Code: Preparation and Operations.

073 All on-site roads must be at least three metres wide, appropriately surfaced and, if used in December, January, February or March, must have at least a one metre shoulder for snow removal.

Site Code: All classes.

Timing Code: Preparation and Operations.

074 On-site roads must have suitable provision for passing and turning where appropriate.

Site Code: All classes.

Timing Code: Preparation and Operations.

08 Signs

081 There must be, at every entrance to the waste disposal site where vehicles carrying waste may enter, a sign providing at least the following information:

- i. the names of the owner and operator
- ii. the hours of operation
- iii. a warning that only municipal waste is acceptable at the site
- iv. the class of site
- v. the certificate of approval or provisional certificate of approval number

Site Code: All classes.

Timing Code: Preparation and Operations.

082 There must be, at every entrance to the site where vehicles carrying waste may enter and adjacent to the

fill area, a sign indicating where help may be reached in the event of fire or accident at the site.

Site Code: I40, R0, R40, U0.

Timing Code: Preparation and Operations.

09 Screening

- 091 Required screening must consist of vegetation or other natural features to the extent reasonably possible.

Site Code: All classes.

Timing Code: Preparation and Operations.

- 092 The site must be screened from the view of persons on public roads.

Site Code: All classes.

Timing Code: Preparation and Operations.

- 093 The site must be screened from the view of persons utilizing any nearby permanent residential, commercial or insitutional facilities or recreational structures.

Site Code: R0, R40, R200.

Timing Code: Preparation and Operations.

- 094 The site must be screened from public view on all sides.

Site Code: U0, U40, U200.

Timing Code: Preparation and Operations.

10 Housekeeping

- 101 Site cleanup must be carried out at least in the spring and fall.

Site Code: I0, I40.

Timing Code: Operations.

- 102 Site cleanup and related housekeeping measures must be carried out in accordance with the site development plan.

Site Code: All classes.

Timing Code: Operations.

11 Contingency Plan

- 111 A contingency plan must be prepared and kept up to date showing backup measures to be implemented in the event of the failure of the site or elements of the design of the site to meet planned and approved environmental criteria.

Site Code: All classes.

Timing Code: Approval and Operations.

12 Hydrogeology and Hydrology

- 121 A hydrogeological and hydrological evaluation of the site and its functioning as a landfill must be prepared and updated as new information becomes available.

Site Code: All classes.

Timing Code: Approval and Operations.

13 Surface Drainage and site contours

- 131 At all times the contours of the site and the provision of works to control surface drainage must, together, minimize disturbance to the surrounding drainage pattern.

Site Code: All classes.

Timing Code: Approval and Operations.

- 132 Contaminated surface drainage must be collected and appropriately treated.

Site Code: All classes.

Timing Code: Operations.

- 133 Steps must be taken so that the quality of the surface water on and adjacent to the site is not impaired as a result of waste at or in the site or as a result of site operations.

Site Code: All classes.

Timing Code: Operations.

14 Cell Cover

- 141 Waste must be deposited in an orderly manner in the fill area and shall be compacted before cover material is applied.

Site Code: All classes.

Timing Code: Operations.

- 142 Cover material must be applied in a layer at least fifteen centimetres thick.

Site Code: All classes.

Timing Code: Operations.

- 143 Cover material must be applied over newly deposited waste at least once a month, except during December, January, February and March.

Site Code: IO.

Timing Code: Operations.

- 144 Cover material must be applied over newly deposited waste at least once a week.

Site Code: RO.

Timing Code: Operations.

- 145 Cover material must be applied over newly deposited waste at least twice a week.

Site Code: UO.

Timing Code: Operations.

- 146 Cover material must be applied over newly deposited waste at the end of each day that the site is open.

Site Code: I40, I200, R40, R200, U40, U200.

Timing Code: Operations.

15 Burning of waste

- 151 The controlled burning of segregated brush and clean wood wastes is permitted under constant supervision on a cleared area of the site where there is a minimum fire break of at least thirty metres in all directions from the site of the burning.

Site Code: I0, I40, I200, R0, R40, R200.

Timing Code: Operations.

- 152 The burning of waste except as specified in paragraph 151 is not permitted.

Site Code: I0, I40, I200, R0, R40, R200.

Timing Code: Operations.

- 153 The burning of waste is not permitted.

Site Code: U0, U40, U200.

Timing Code: Operations.

16 Final Cover

- 161 Whenever any part of a fill area has reached its capacity a final cover of cover material must be applied and compacted.

Site Code: All classes.

Timing Code: Operations.

- 162 The compacted cover material must be at least 0.75 metres thick.

Site Code: All classes.

Timing Code: Operations.

- 163 Vegetation must be appropriately chosen and sufficiently well established on the final cover that it regenerates annually.

Site Code: All classes.

Timing Code: Operations.

17 Leachate Control

- 171 Leachate migrating from the landfill and from the contaminant attenuation zone, if any, must have no more than a trivial adverse effect on adjacent groundwater.

Site Code: All classes.

Timing Code: Approval and Operations.

- 172 Compliance with paragraph 171 must be attained by means of careful site development and operation and the natural characteristics of the site and the surrounding lands.

Site Code: IO, RO, UO.

Timing Code: Approval and Operations.

- 173 Compliance with paragraph 171 may be accomplished with the assistance of engineered facilities provided appropriate provision is made for their perpetual maintenance and operation.

Site Code: I40, I200, R40, R200, U40, U200.

Timing Code: Approval and Operations.

18 Gas Control

- 181 Gases generated by the decomposition of waste and migrating through the ground must be confined to the landfill.

Site Code: All classes.

Timing Code: Approval and Operations.

- 182 Compliance with paragraph 181 must be attained by means of careful site development and operation and the natural characteristics of the site and the surrounding lands.

Site Code: IO, RO, UO.

Timing Code: Approval and Operations.

- 183 Compliance with paragraph 181 may be accomplished with the assistance of engineered facilities provided appropriate provision is made for their perpetual maintenance and operation.

Site Code: I40, I200, R40, R200, U40, U200.

Timing Code: Approval and Operations.

19 Supervision

- 191 The site must be inspected weekly at all times that the site is accepting waste to ensure that it is being operated properly and in accordance with all applicable requirements and a written record of the results of each such inspection must be made and retained by the owner or operator for two years.

Site Code: IO, RO.

Timing Code: Operations.

- 192 The site must be inspected daily at all times that the site is accepting waste to ensure that it is being operated properly and in accordance with all applicable requirements and a written record of the results of each inspection must be made and retained by the owner or operator for two years.

Site Code: UO.

Timing Code: Operations.

- 193 A supervisor must be present at the site at all times that the site is open for the acceptance of waste.

Site Code: I40, I200, R40, R200, U40, U200.

Timing Code: Operations.

- 194 The supervisor must make regular written entries in a log book recording the progress of site development and utilization, whether this accords with the site development plan, and any particulars of site operations that are out of the ordinary including complaints received, resulting actions taken and responses provided.

Site Code: I40, I200, R40, R200, U40, U200.

Timing Code: Operations.

- 195 Log books must be retained by the owner or operator for two years after they are filled.

Site Code: I40, I200, R40, R200, U40, U200.

Timing Code: Operations.

20 Vectors and Rodents

- 201 A contingency plan must be prepared and kept current and shall be implemented when necessary to control rodents or other vectors.

Site Code: I0, I40, R0.

Timing Code: Approval and Operations.

- 202 A routine pest control program must be undertaken to maintain control of rodents and other vectors.

Site Code: I200, R40, R200, U0, U40, U200.

Timing Code: Preparation and Operations.

21 Monitoring

- 211 A program of monitoring bodies of water, watercourses and wells on or near the landfill must be instituted and continued.

Site Code: I0.

Timing Code: Approval and Operations.

- 212 A predictive monitoring program must be designed and kept current and carried out in order to test the understanding of the hydrogeologic regime and the effects of landfilling in that setting.

Site Code: I40, I200, R0, R40, R200, U0, U40, U200.

Timing Code: Approval and Operations.

22 Status Report

- 221 A status report statement summarizing implementation of the site development plan, any variance from the site development plan, complaints received, monitoring results and interpretation thereof, changes in separation distance, anticipated changes in operation and management, remaining site capacity and expected site life, must be prepared and submitted to the Director on or before the last day of March in every second year and respecting, in so far as past occurrences go, the preceding two years, the first of such reports to be submitted in the second year after this standard becomes applicable.

Site Code: I0, I40.

Timing Code: Operations.

- 222 A status report statement summarizing implementation of the site development plan, any variance from the site development plan, complaints received, monitoring results and interpretation thereof, change in separation distance, anticipated changes in operation and management, remaining site capacity and expected site life, must be prepared and submitted to the Director on or before the last day of March in every year and respecting, in so far as past occurrences go, the preceding year, the first of such reports to be submitted in the year after this standard becomes applicable.

Site Code: I200, R0, R40, R200, U0, U40, U200.

Timing Code: Operations.

23 Financial Guarantees

- 231 Financial guarantees as proposed in the application for certificate of approval and approved or as

required by conditions of approval, must be provided and maintained in accordance with the application, approval or conditions including any alterations that may be provided for or subsequently made.

Site Code: All classes of sites not owned by the Crown or a Crown agency.

Timing Code: Preparation and Operations.

(7) Subject to subsection (8), the standards in subsection (6) apply, according to their terms, site codes and timing codes, to a landfill in respect of which a certificate of approval or provisional certificate of approval has been issued at the time this section comes into force, one year after this section comes into force.

(8) The following special rules apply with respect to the application of the standards in subsection (6) to a landfill in respect of which a certificate of approval or provisional certificate of approval has been issued at the time this section comes into force:

1. Compliance with the following standards must be achieved by landfills in the specified classes within one year after this section comes into force despite the indicated timing codes: 011, 012, 021 and 121.
2. Compliance with the following standard is not required at a site where this compliance would not be possible: 061.
3. Compliance with the following standards is not required in respect of on-site roads in existence one year after this section comes into force: 073 and 074.
4. Compliance with the following standards is not required: 172, 173, 182 and 183.
5. Compliance with the following standards must be achieved within two years after this section comes into force: 031, 111, 121, 221 and 222.
6. Terms or conditions in effect as part of a certificate of approval or provisional certificate of approval take precedence over any conflicting standard that would otherwise be applicable.

(9) Where the separation distance of a landfill changes such that the applicable letter, specified in subsection (2), changes, the standards listed in subsection (6) applicable to the new class must be complied with on or before the first day of the year that is at least one year after the change occurs and the standards applicable to the old class continue to apply in the interim.

(10) A change in literal identifier does not apply to make standard 222 apply in place of standard 221.

4.-(1) Section 8 of the said Regulation is amended by striking out "land-filling site" in the second and third lines and inserting in lieu thereof "landfill".

(2) Paragraph 1 of section 8 of the said Regulation is amended by striking out "site" in the third line and inserting in lieu thereof "landfill".

(3) Paragraph 2 of section 8 of the said Regulation is amended by striking out "site" in the first and third lines and inserting in lieu thereof "landfill".

(4) Paragraph 3 of section 8 of the said Regulation is amended by striking out "site" in the first line and inserting in lieu thereof "landfill".

(5) Paragraph 5 of section 8 of the said Regulation is amended by striking out "site" in the third line and inserting in lieu thereof "landfill".

(6) Paragraph 6 of section 8 of the said Regulation is amended by striking out "landfilling site" in the first and second lines and inserting in lieu thereof "landfill".

(7) Paragraph 7 of section 8 of the said Regulation is amended by striking out "landfilling site" in the third line and inserting in lieu thereof "landfill" and by striking out "site" in the fourth line and inserting in lieu thereof "landfill".

(8) Paragraph 8 of section 8 of the said Regulation is amended by striking out "site" in the first line and inserting in lieu thereof "landfill".

(9) Paragraph 10 of section 8 of the said Regulation is amended by striking out "site" in the second line and inserting in lieu thereof "landfill".

(10) Paragraph 11 of section 8 of the said Regulation is amended by striking out "site" in the third line and inserting in lieu thereof "landfill".

(11) Paragraph 12 of section 8 of the said Regulation is amended by striking out "site" in the first line and inserting in lieu thereof "landfill".

(12) Paragraph 14 of section 8 of the said Regulation is amended by striking out "site" in the third line and inserting in lieu thereof "landfill".

(13) Paragraph 15 of section 8 of the said Regulation is amended by striking out "site" in the third line and inserting in lieu thereof "landfill".

(14) Paragraph 17 of section 8 of the said Regulation is amended by striking out "site" in the second line in both instances where it appears and inserting in lieu thereof in each instance "landfill".

(15) Section 8 of the said Regulation is further amended by adding thereto the following subsection:

(2) This section does not apply to municipal waste landfills.

5. Paragraph 2 of section 9 of the said Regulation is revoked and the following substituted therefor:

2. Incinerator waste shall be disposed of at a landfill.

6. Sections 10 and 11 of the said Regulation are revoked and the following substituted therefor:

10. No dump may be established or operated in Ontario.

7. This Regulation comes into force six months after it is filed with the Registrar of Regulations.

REGULATION 309

Transitional Phase-in Program for Existing Sites

Classification of Municipal Landfill Sites

The proposed Waste Management Regulation 309 categorizes Municipal Waste Disposal Sites into nine classes. These sites will have to meet 23 proposed standards, nine of which are entirely new. Therefore, many existing sites will have to be upgraded to meet these additional requirements, e.g. development plans, status reports. Furthermore, it should be noted that a majority of existing sites, in varying degree, do not meet the current regulation requirements and will require upgrading of some sort with or without the new Regulations.

Existing sites, under the Class IO category (approx. 600 to 700 sites including MNR Sites), due to their size and remoteness, pose little if any serious environmental and health problems. These smaller, light use, sites (see matrix) constitute approximately 50% of the present total of 1,400 active sites.

A transitional phase-in program will be required to allow for upgrading and recertification of existing sites in order to comply with the proposed Regulation 309.

The following course of action is being suggested as a phase-in program:

Phase 1 Information period - Six months after promulgation of the Regulation

During this period, the Regions will inform site owner/operators of the requirements and where possible indicate deficiencies. The Waste Management Branch, on request, will assist the regions, explaining the intent of the new requirements.

Phase 2

Following Phase 1, owner/operators have a period of up to two years to satisfy the required standards identified in the matrix, subject to the following schedule.

- A. Within the first year, after Phase I, the following standards must be met:

<u>Reference</u>	<u>Standard</u>
2	Registration on Title
4	Fencing
7	On-site Roads
8	Signs
9	Screening
10	Housekeeping
13	Surface Drainage
14	Cell Cover
15	Burning
19	Supervision
20	Vector and Rodents
23	Status Report (where required)
23	Financial Guarantees (where required)

B. The remaining Standards as identified below must be submitted with completed plans, evaluations and programs (if any of these had not been completed in the past) for Ministry approval anytime within the two-year period after Phase 1).

<u>Reference</u>	<u>Standard</u>
3	Development Plans
6	Buffers
11	Contingency Plan
12	Hydrogeological Evaluation
16	Final Cover
17	Leachate Controls
18	Gas Controls
21	Monitoring Program

The implementation of these standards will be determined by negotiation between this Ministry (depending upon the site use) and the site owner/operator. It is, however, intended that an implementation program be put in place and enforced.

For Class IO sites, the implementation of the standards will be in accordance with a timetable negotiated by the owner/operator and the Director.

Phase 3 Recertification

As soon as the approved upgrading program has been completed, the site should be recertified based on the Regional Directors recommendations, or

A revised Certificate of Approval conditional upon the implementation of the proposal could be issued once plans are received.

It is recommended that sites should continue to be certified to accept municipal waste based on life time capacity and that site class would appear on the Certificate of Approval.

GU/sp
June, 1986
WM 07
3353A

